SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120> A NOVEL HUMAN G-PROTEIN COUPLED RECEPTOR, HGPRBMY11, EXPRESSED HIGHLY IN HEART AND VARIANTS THEREOF

<130> D0075.NP

<150> 60/249,613
<151> 2000-11-17

<150> 60/257,611
<151> 2000-12-21

<150> 60/305,818
<151> 2001-07-16

<160> 81

<170> PatentIn version 3.0

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gaggcagcag aagccagggc agctgaaaga cagagacctt cagtctgaac caacaacaag 240

caaagttaaa ttatggatat ccaagggagt ctatagaagg tccatgcaag acattttgac 300

tacttgtctg aactagatat cccttgaatg tgcacacaaa aagtgaatgg gtcatttgat 360

aagggaaaac taggttccaa gatggctgaa taggaagagc tccagtctgc agatcccagt 420

gtgagcaacg tggaagatgg gtgatttctg catttccaac tgagcatgga gagaaaaatt 480

tatgtccttg caaccatcca tctccgtatc agaa atg gaa cca aat ggc acc ttc 535
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agc aat aac aac agc agg aac tgc aca att gaa aac ttc aag aga gaa 583
Ser Asn Asn Asn Ser Arg Asn Cys Thr Ile Glu Asn Phe Lys Arg Glu
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ttt ttc cca att gta tat ctg ata ata ttt ttc tgg gga gtc ttg gga 631

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Phe Phe Pro Ile Val Tyr Leu Ile Ile Phe Phe Trp Gly Val Leu Gly
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aat ggg ttg tcc ata tat gtt ttc ctg cag cct tat aag aag tcc aca      679
Asn Gly Leu Ser Ile Tyr Val Phe Leu Gln Pro Tyr Lys Lys Ser Thr
40                  45                  50                  55

tct gtg aac gtt ttc atg cta aat ctg gcc att tca gat ctc ctg ttc      727
Ser Val Asn Val Phe Met Leu Asn Leu Ala Ile Ser Asp Leu Leu Phe
                60                  65                  70

ata agc acg ctt ccc ttc agg gct gac tat tat ctt aga ggc tcc aat      775
Ile Ser Thr Leu Pro Phe Arg Ala Asp Tyr Tyr Leu Arg Gly Ser Asn
            75                  80                  85

tgg ata ttt gga gac ctg gcc tgc agg att atg tct tat tcc ttg tat      823
Trp Ile Phe Gly Asp Leu Ala Cys Arg Ile Met Ser Tyr Ser Leu Tyr
        90                  95                  100

gtc aac atg tac agc agt att tat ttc ctg acc gtg ctg agt gtt gtg      871
Val Asn Met Tyr Ser Ser Ile Tyr Phe Leu Thr Val Leu Ser Val Val
    105                 110                 115

cgt ttc ctg gca atg gtt cac ccc ttt cgg ctt ctg cat gtc acc agc      919
Arg Phe Leu Ala Met Val His Pro Phe Arg Leu Leu His Val Thr Ser
120                 125                 130                 135

atc agg agt gcc tgg atc ctc tgt ggg atc ata tgg atc ctt atc atg      967
Ile Arg Ser Ala Trp Ile Leu Cys Gly Ile Ile Trp Ile Leu Ile Met
                140                 145                 150

gct tcc tca ata atg ctc ctg gac agt ggc tct gag cag aac ggc agt     1015
Ala Ser Ser Ile Met Leu Leu Asp Ser Gly Ser Glu Gln Asn Gly Ser
            155                 160                 165

gtc aca tca tgc tta gag ctg aat ctc tat aaa att gct aag ctg cag     1063
Val Thr Ser Cys Leu Glu Leu Asn Leu Tyr Lys Ile Ala Lys Leu Gln
        170                 175                 180

acc atg aac tat att gcc ttg gtg gtg ggc tgc ctg ctg cca ttt ttc     1111
Thr Met Asn Tyr Ile Ala Leu Val Val Gly Cys Leu Leu Pro Phe Phe
    185                 190                 195

aca ctc agc atc tgt tat ctg ctg atc att cgg gtt ctg tta aaa gtg     1159
Thr Leu Ser Ile Cys Tyr Leu Leu Ile Ile Arg Val Leu Leu Lys Val
200                 205                 210                 215

gag gtc cca gaa tcg ggg ctg cgg gtt tct cac agg aag gca ctg acc     1207
Glu Val Pro Glu Ser Gly Leu Arg Val Ser His Arg Lys Ala Leu Thr
                220                 225                 230

acc atc atc atc acc ttg atc atc ttc ttc ttg tgt ttc ctg ccc tat     1255
Thr Ile Ile Ile Thr Leu Ile Ile Phe Phe Leu Cys Phe Leu Pro Tyr
            235                 240                 245

cac aca ctg agg acc gtc cac ttg acg aca tgg aaa gtg ggt tta tgc     1303
His Thr Leu Arg Thr Val His Leu Thr Thr Trp Lys Val Gly Leu Cys
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aaa gac aga ctg cat aaa gct ttg gtt atc aca ctg gcc ttg gca gca      1351
Lys Asp Arg Leu His Lys Ala Leu Val Ile Thr Leu Ala Leu Ala Ala
    265                 270                 275

gcc aat gcc tgc ttc aat cct ctg ctc tat tac ttt gct ggg gag aat      1399
Ala Asn Ala Cys Phe Asn Pro Leu Leu Tyr Tyr Phe Ala Gly Glu Asn
280                 285                 290                 295

ttt aag gac aga cta aag tct gca ctc aga aaa ggc cat cca cag aag      1447
Phe Lys Asp Arg Leu Lys Ser Ala Leu Arg Lys Gly His Pro Gln Lys
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gca aag aca aag tgt gtt ttc cct gtt agt gtg tgg ttg aga aag gaa      1495
Ala Lys Thr Lys Cys Val Phe Pro Val Ser Val Trp Leu Arg Lys Glu
            315                 320                 325

aca aga gta taaggagctc ttagatgaga cctgttcttg tatccttgtg             1544
Thr Arg Val
        330

tccatcttca ttcactcata gtctccaaat gactttgtat ttacatcact cccaacaaat   1604

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1               5                   10                  15

Ile Glu Asn Phe Lys Arg Glu Phe Phe Pro Ile Val Tyr Leu Ile Ile
            20                  25                  30

Phe Phe Trp Gly Val Leu Gly Asn Gly Leu Ser Ile Tyr Val Phe Leu
        35                  40                  45

Gln Pro Tyr Lys Lys Ser Thr Ser Val Asn Val Phe Met Leu Asn Leu
    50                  55                  60

Ala Ile Ser Asp Leu Leu Phe Ile Ser Thr Leu Pro Phe Arg Ala Asp
65                  70                  75                  80

Tyr Tyr Leu Arg Gly Ser Asn Trp Ile Phe Gly Asp Leu Ala Cys Arg
```

```
                85                  90                  95

Ile Met Ser Tyr Ser Leu Tyr Val Asn Met Tyr Ser Ser Ile Tyr Phe
            100                 105                 110

Leu Thr Val Leu Ser Val Val Arg Phe Leu Ala Met Val His Pro Phe
        115                 120                 125

Arg Leu Leu His Val Thr Ser Ile Arg Ser Ala Trp Ile Leu Cys Gly
    130                 135                 140

Ile Ile Trp Ile Leu Ile Met Ala Ser Ser Ile Met Leu Leu Asp Ser
145                 150                 155                 160

Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys Leu Glu Leu Asn Leu
                165                 170                 175

Tyr Lys Ile Ala Lys Leu Gln Thr Met Asn Tyr Ile Ala Leu Val Val
            180                 185                 190

Gly Cys Leu Leu Pro Phe Phe Thr Leu Ser Ile Cys Tyr Leu Leu Ile
        195                 200                 205

Ile Arg Val Leu Leu Lys Val Glu Val Pro Glu Ser Gly Leu Arg Val
    210                 215                 220

Ser His Arg Lys Ala Leu Thr Thr Ile Ile Ile Thr Leu Ile Ile Phe
225                 230                 235                 240

Phe Leu Cys Phe Leu Pro Tyr His Thr Leu Arg Thr Val His Leu Thr
                245                 250                 255

Thr Trp Lys Val Gly Leu Cys Lys Asp Arg Leu His Lys Ala Leu Val
            260                 265                 270

Ile Thr Leu Ala Leu Ala Ala Ala Asn Ala Cys Phe Asn Pro Leu Leu
        275                 280                 285

Tyr Tyr Phe Ala Gly Glu Asn Phe Lys Asp Arg Leu Lys Ser Ala Leu
    290                 295                 300

Arg Lys Gly His Pro Gln Lys Ala Lys Thr Lys Cys Val Phe Pro Val
305                 310                 315                 320
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Ser Val Trp Leu Arg Lys Glu Thr Arg Val
                325                 330


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<213>  homo sapiens

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Met Thr Glu Ala Leu Ile Ser Ala Ala Leu Asn Gly Thr Gln Pro Glu
1               5                  10                  15

Leu Leu Ala Gly Gly Trp Ala Ala Gly Asn Ala Thr Thr Lys Cys Ser
            20                  25                  30

Leu Thr Lys Thr Gly Phe Gln Phe Tyr Tyr Leu Pro Thr Val Tyr Ile
        35                  40                  45

Leu Val Phe Ile Thr Gly Phe Leu Gly Asn Ser Val Ala Ile Trp Met
    50                  55                  60

Phe Val Phe His Met Arg Pro Trp Ser Gly Ile Ser Val Tyr Met Phe
65                  70                  75                  80

Asn Leu Ala Leu Ala Asp Phe Leu Tyr Val Leu Thr Leu Pro Ala Leu
                85                  90                  95

Ile Phe Tyr Tyr Phe Asn Lys Thr Asp Trp Ile Phe Gly Asp Val Met
            100                 105                 110

Cys Lys Leu Gln Arg Phe Ile Phe His Val Asn Leu Tyr Gly Ser Ile
        115                 120                 125

Leu Phe Leu Thr Cys Ile Ser Val His Arg Tyr Thr Gly Val Val His
    130                 135                 140

Pro Leu Lys Ser Leu Gly Arg Leu Lys Lys Lys Asn Ala Val Tyr Val
145                 150                 155                 160

Ser Ser Leu Val Trp Ala Leu Val Val Ala Val Ile Ala Pro Ile Leu
                165                 170                 175

Phe Tyr Ser Gly Thr Gly Val Arg Arg Asn Lys Thr Ile Thr Cys Tyr
            180                 185                 190

Asp Thr Thr Ala Asp Glu Tyr Leu Arg Ser Tyr Phe Val Tyr Ser Met
        195                 200                 205

Cys Thr Thr Val Phe Met Phe Cys Ile Pro Phe Ile Val Ile Leu Gly
    210                 215                 220

Cys Tyr Gly Leu Ile Val Lys Ala Leu Ile Tyr Lys Asp Leu Asp Asn
225                 230                 235                 240
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Ser Pro Leu Arg Arg Lys Ser Ile Tyr Leu Val Ile Ile Val Leu Thr
245 250 255

Val Phe Ala Val Ser Tyr Leu Pro Phe His Val Met Lys Thr Leu Asn
260 265 270

Leu Arg Ala Arg Leu Asp Phe Gln Thr Pro Gln Met Cys Ala Phe Asn
275 280 285

Asp Lys Val Tyr Ala Thr Tyr Gln Val Thr Arg Gly Leu Ala Ser Leu
290 295 300

Asn Ser Cys Val Asp Pro Ile Leu Tyr Phe Leu Ala Gly Asp Thr Phe
305 310 315 320

Arg Arg Arg Leu Ser Arg Ala Thr Arg Lys Ser Ser Arg Arg Ser Glu
325 330 335

Pro Asn Val Gln Ser Lys Ser Glu Glu Met Thr Leu Asn Ile Leu Thr
340 345 350

Glu Tyr Lys Gln Asn Gly Asp Thr Ser Leu
355 360

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<213> homo sapiens

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Met Thr Glu Ala Leu Ile Ser Ala Ala Leu Asn Gly Thr Gln Pro Glu
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Leu Leu Ala Gly Gly Trp Ala Ala Gly Asn Ala Ser Thr Lys Cys Ser
20 25 30

Leu Thr Lys Thr Gly Phe Gln Phe Tyr Tyr Leu Pro Thr Val Tyr Ile
35 40 45

Leu Val Phe Ile Thr Gly Phe Leu Gly Asn Ser Val Ala Ile Trp Met
50 55 60

Phe Val Phe His Met Arg Pro Trp Ser Gly Ile Ser Val Tyr Met Phe
65 70 75 80

Asn Leu Ala Leu Ala Asp Phe Leu Tyr Val Leu Thr Leu Pro Ala Leu
85 90 95

Ile Phe Tyr Tyr Phe Asn Lys Thr Asp Trp Ile Phe Gly Asp Val Met
100 105 110

Cys Lys Leu Gln Arg Phe Ile Phe His Val Asn Leu Tyr Gly Ser Ile
115 120 125

Leu Phe Leu Thr Cys Ile Ser Val His Arg Tyr Thr Gly Val Val His

```
    130                 135                 140

Pro Leu Lys Ser Leu Gly Arg Leu Lys Lys Lys Asn Ala Val Tyr Val
145                 150                 155                 160

Ser Ser Leu Val Trp Ala Leu Val Val Ala Val Ile Ala Pro Ile Leu
                165                 170                 175

Phe Tyr Ser Gly Thr Gly Val Arg Arg Asn Lys Thr Ile Thr Cys Tyr
            180                 185                 190

Asp Thr Thr Ala Asp Glu Tyr Leu Arg Ser Tyr Phe Val Tyr Ser Met
        195                 200                 205

Cys Thr Thr Val Phe Met Phe Cys Ile Pro Phe Ile Val Ile Leu Gly
    210                 215                 220

Cys Tyr Gly Leu Ile Val Lys Ala Leu Ile Tyr Lys Asp Leu Asp Asn
225                 230                 235                 240

Ser Pro Leu Arg Arg Lys Ser Ile Tyr Leu Val Ile Ile Val Leu Thr
                245                 250                 255

Val Phe Ala Val Ser Tyr Leu Pro Phe His Val Met Lys Thr Leu Asn
            260                 265                 270

Leu Arg Ala Arg Leu Asp Phe Gln Thr Pro Gln Met Cys Ala Phe Asn
        275                 280                 285

Asp Lys Val Tyr Ala Thr Tyr Gln Val Thr Arg Gly Leu Ala Ser Leu
    290                 295                 300

Asn Ser Cys Val Asp Pro Ile Leu Tyr Phe Leu Ala Gly Asp Thr Phe
305                 310                 315                 320

Arg Arg Arg Leu Ser Arg Ala Thr Arg Lys Ser Ser Arg Arg Ser Glu
                325                 330                 335

Pro Asn Val Gln Ser Lys Ser Glu Glu Met Thr Leu Asn Ile Leu Thr
            340                 345                 350

Glu Tyr Lys Gln Asn Gly Asp Thr Ser Leu
        355                 360
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Met Thr Glu Val Pro Trp Ser Ala Val Pro Asn Gly Thr Asp Ala Ala
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Phe Leu Ala Gly Leu Gly Ser Leu Trp Gly Asn Ser Thr Ile Ala Ser
            20                  25                  30
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```
Thr Ala Ala Val Ser Ser Ser Phe Arg Cys Ala Leu Ile Lys Thr Gly
        35                  40                  45

Phe Gln Phe Tyr Tyr Leu Pro Ala Val Tyr Ile Leu Val Phe Ile Ile
    50                  55                  60

Gly Phe Leu Gly Asn Ser Val Ala Ile Trp Met Phe Val Phe His Met
65                  70                  75                  80

Lys Pro Trp Ser Gly Ile Ser Val Tyr Met Phe Asn Leu Ala Leu Ala
                85                  90                  95

Asp Phe Leu Tyr Val Leu Thr Leu Pro Ala Leu Ile Phe Tyr Tyr Phe
            100                 105                 110

Asn Lys Thr Asp Trp Ile Phe Gly Asp Val Met Cys Lys Leu Gln Arg
        115                 120                 125

Phe Ile Phe His Val Asn Leu Tyr Gly Ser Ile Leu Phe Leu Thr Cys
    130                 135                 140

Ile Ser Ala His Arg Tyr Ser Gly Val Val Tyr Pro Leu Lys Ser Leu
145                 150                 155                 160

Gly Arg Leu Lys Lys Lys Asn Ala Ile Tyr Val Ser Val Leu Val Trp
                165                 170                 175

Leu Ile Val Val Val Ala Ile Ser Pro Ile Leu Phe Tyr Ser Gly Thr
            180                 185                 190

Gly Ile Arg Lys Asn Lys Thr Val Thr Cys Tyr Asp Ser Thr Ser Asp
        195                 200                 205

Glu Tyr Leu Arg Ser Tyr Phe Ile Tyr Ser Met Cys Thr Thr Val Ala
    210                 215                 220

Met Phe Cys Ile Pro Leu Val Leu Ile Leu Gly Cys Tyr Gly Leu Ile
225                 230                 235                 240

Val Arg Ala Leu Ile Tyr Lys Asp Leu Asp Asn Ser Pro Leu Arg Arg
                245                 250                 255

Lys Ser Ile Tyr Leu Val Ile Ile Val Leu Thr Val Phe Ala Val Ser
            260                 265                 270

Tyr Ile Pro Phe His Val Met Lys Thr Met Asn Leu Arg Ala Arg Leu
        275                 280                 285

Asp Phe Gln Thr Pro Glu Met Cys Asp Phe Asn Asp Arg Val Tyr Ala
    290                 295                 300

Thr Tyr Gln Val Thr Arg Gly Leu Ala Ser Leu Asn Ser Cys Val Asp
305                 310                 315                 320

Pro Ile Leu Tyr Phe Leu Ala Gly Asp Thr Phe Arg Arg Arg Leu Ser
                325                 330                 335
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```
Arg Ala Thr Arg Lys Ala Ser Arg Arg Ser Glu Ala Asn Leu Gln Ser
            340                 345                 350

Lys Ser Glu Glu Met Thr Leu Asn Ile Leu Ser Glu Phe Lys Gln Asn
        355                 360                 365

Gly Asp Thr Ser Leu
    370
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Met Asp Glu Thr Gly Asn Leu Thr Val Ser Ser Ala Thr Cys His Asp
1               5                   10                  15

Thr Ile Asp Asp Phe Arg Asn Gln Val Tyr Ser Thr Leu Tyr Ser Met
            20                  25                  30

Ile Ser Val Val Gly Phe Phe Gly Asn Gly Phe Val Leu Tyr Val Leu
        35                  40                  45

Ile Lys Thr Tyr His Lys Lys Ser Ala Phe Gln Val Tyr Met Ile Asn
    50                  55                  60

Leu Ala Val Ala Asp Leu Leu Cys Val Cys Thr Leu Pro Leu Arg Val
65                  70                  75                  80

Val Tyr Tyr Val His Lys Gly Ile Trp Leu Phe Gly Asp Phe Leu Cys
                85                  90                  95

Arg Leu Ser Thr Tyr Ala Leu Tyr Val Asn Leu Tyr Cys Ser Ile Phe
            100                 105                 110

Phe Met Thr Ala Met Ser Phe Phe Arg Cys Ile Ala Ile Val Phe Pro
        115                 120                 125

Val Gln Asn Ile Asn Leu Val Thr Gln Lys Lys Ala Arg Phe Val Cys
    130                 135                 140

Val Gly Ile Trp Ile Phe Val Ile Leu Thr Ser Ser Pro Phe Leu Met
145                 150                 155                 160

Ala Lys Pro Gln Lys Asp Glu Lys Asn Asn Thr Lys Cys Phe Glu Pro
                165                 170                 175

Pro Gln Asp Asn Gln Thr Lys Asn His Val Leu Val Leu His Tyr Val
            180                 185                 190

Ser Leu Phe Val Gly Phe Ile Ile Pro Phe Val Ile Ile Ile Val Cys
        195                 200                 205

Tyr Thr Met Ile Ile Leu Thr Leu Leu Lys Lys Ser Met Lys Lys Asn
    210                 215                 220
```

Leu Ser Ser His Lys Lys Ala Ile Gly Met Ile Met Val Val Thr Ala
225 230 235 240

Ala Phe Leu Val Ser Phe Met Pro Tyr His Ile Gln Arg Thr Ile His
245 250 255

Leu His Phe Leu His Asn Glu Thr Lys Pro Cys Asp Ser Val Leu Arg
260 265 270

Met Gln Lys Ser Val Val Ile Thr Leu Ser Leu Ala Ala Ser Asn Cys
275 280 285

Cys Phe Asp Pro Leu Leu Tyr Phe Phe Ser Gly Gly Asn Phe Arg Lys
290 295 300

Arg Leu Ser Thr Phe Arg Lys His Ser Leu Ser Ser Val Thr Tyr Val
305 310 315 320

Pro Arg Lys Lys Ala Ser Leu Pro Glu Lys Gly Glu Glu Ile Cys Lys
325 330 335

Val

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Met Val Ser Ser Asn Cys Ser Thr Glu Asp Ser Phe Lys Tyr Thr Leu
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Tyr Gly Cys Val Phe Ser Met Val Phe Val Leu Gly Leu Ile Ala Asn
20 25 30

Cys Val Ala Ile Tyr Ile Phe Thr Phe Thr Leu Lys Val Arg Asn Glu
35 40 45

Thr Thr Thr Tyr Met Leu Asn Leu Ala Ile Ser Asp Leu Leu Phe Val
50 55 60

Phe Thr Leu Pro Phe Arg Ile Tyr Tyr Phe Val Val Arg Asn Trp Pro
65 70 75 80

Phe Gly Asp Val Leu Cys Lys Ile Ser Val Thr Leu Phe Tyr Thr Asn
85 90 95

Met Tyr Gly Ser Ile Leu Phe Leu Thr Cys Ile Ser Val Asp Arg Phe
100 105 110

Leu Ala Ile Val His Pro Phe Arg Ser Lys Thr Leu Arg Thr Lys Arg
115 120 125

Asn Ala Arg Ile Val Cys Val Ala Val Trp Ile Thr Val Leu Ala Gly

130 135 140

Ser Thr Pro Ala Ser Phe Phe Gln Ser Thr Asn Arg Gln Asn Asn Thr
145 150 155 160

Glu Gln Arg Thr Cys Phe Glu Asn Phe Pro Glu Ser Thr Trp Lys Thr
165 170 175

Tyr Leu Ser Arg Ile Val Ile Phe Ile Glu Ile Val Gly Phe Phe Ile
180 185 190

Pro Leu Ile Leu Asn Val Thr Cys Ser Thr Met Val Leu Arg Thr Leu
195 200 205

Asn Lys Pro Leu Thr Leu Ser Arg Asn Lys Leu Ser Lys Lys Lys Val
210 215 220

Leu Lys Met Ile Phe Val His Leu Val Ile Phe Cys Phe Cys Phe Val
225 230 235 240

Pro Tyr Asn Ile Thr Leu Ile Leu Tyr Ser Leu Met Arg Thr Gln Thr
245 250 255

Trp Ile Asn Cys Ser Val Val Thr Ala Val Arg Thr Met Tyr Pro Val
260 265 270

Thr Leu Cys Ile Ala Val Ser Asn Cys Cys Phe Asp Pro Ile Val Tyr
275 280 285

Tyr Phe Thr Ser Asp Thr Asn Ser Glu Leu Asp Lys Lys Gln Gln Val
290 295 300

His Gln Asn Thr
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Met Asn Gly Leu Glu Val Ala Pro Pro Gly Leu Ile Thr Asn Phe Ser
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Leu Ala Thr Ala Glu Gln Cys Gly Gln Glu Thr Pro Leu Glu Asn Met
20 25 30

Leu Phe Ala Ser Phe Tyr Leu Leu Asp Phe Ile Leu Ala Leu Val Gly
35 40 45

Asn Thr Leu Ala Leu Trp Leu Phe Ile Arg Asp His Lys Ser Gly Thr
50 55 60

Pro Ala Asn Val Phe Leu Met His Leu Ala Val Ala Asp Leu Ser Cys
65 70 75 80

```
Val Leu Val Leu Pro Thr Arg Leu Val Tyr His Phe Ser Gly Asn His
                85                  90                  95

Trp Pro Phe Gly Glu Ile Ala Cys Arg Leu Thr Gly Phe Leu Phe Tyr
            100                 105                 110

Leu Asn Met Tyr Ala Ser Ile Tyr Phe Leu Thr Cys Ile Ser Ala Asp
        115                 120                 125

Arg Phe Leu Ala Ile Val His Pro Val Lys Ser Leu Lys Leu Arg Arg
    130                 135                 140

Pro Leu Tyr Ala His Leu Ala Cys Ala Phe Leu Trp Val Val Val Ala
145                 150                 155                 160

Val Ala Met Ala Pro Leu Leu Val Ser Pro Gln Thr Val Gln Thr Asn
                165                 170                 175

His Thr Val Val Cys Leu Gln Leu Tyr Arg Glu Lys Ala Ser His His
            180                 185                 190

Ala Leu Val Ser Leu Ala Val Ala Phe Thr Phe Pro Phe Ile Thr Thr
        195                 200                 205

Val Thr Cys Tyr Leu Leu Ile Ile Arg Ser Leu Arg Gln Gly Leu Arg
    210                 215                 220

Val Glu Lys Arg Leu Lys Thr Lys Ala Val Arg Met Ile Ala Ile Val
225                 230                 235                 240

Leu Ala Ile Phe Leu Val Cys Phe Val Pro Tyr His Val Asn Arg Ser
                245                 250                 255

Val Tyr Val Leu His Tyr Arg Ser His Gly Ala Ser Cys Ala Thr Gln
            260                 265                 270

Arg Ile Leu Ala Leu Ala Asn Arg Ile Thr Ser Cys Leu Thr Ser Leu
        275                 280                 285

Asn Gly Ala Leu Asp Pro Ile Met Tyr Phe Phe Val Ala Glu Lys Phe
    290                 295                 300

Arg His Ala Leu Cys Asn Leu Leu Cys Gly Lys Arg Leu Lys Gly Pro
305                 310                 315                 320

Pro Pro Ser Phe Glu Gly Lys Thr Asn Glu Ser Ser Leu Ser Ala Lys
                325                 330                 335

Ser Glu Leu
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aacgttttca tgctaaatct 80

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ctgaagggaa gcgtgcttat 20

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Phe Phe Pro Ile Val Tyr Leu Ile Ile Phe Phe Trp Gly Val Leu Gly
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Asn Gly Leu Ser Ile Tyr Val Phe Leu
20 25

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Val Phe Met Leu Asn Leu Ala Ile Ser Asp Leu Leu Phe Ile Ser Thr
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Leu Pro Phe Arg Ala Asp Tyr Tyr Leu
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Val Asn Met Tyr Ser Ser Ile Tyr Phe Leu Thr Val Leu Ser Val Val

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Arg Phe Leu Ala Met Val
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Ala Trp Ile Leu Cys Gly Ile Ile Trp Ile Leu Ile Met Ala Ser Ser
1 5 10 15

Ile Met Leu Leu
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Ile Ala Leu Val Val Gly Cys Leu Leu Pro Phe Phe Thr Leu Ser Ile
1 5 10 15

Cys Tyr Leu

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Ala Leu Thr Thr Ile Ile Ile Thr Leu Ile Ile Phe Phe Leu Cys Phe
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Leu Pro Tyr His Thr Leu
20

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Ala Leu Val Ile Thr Leu Ala Leu Ala Ala Ala Asn Ala Cys Phe Asn
1 5 10 15

Pro Leu Leu Tyr Tyr Phe Ala
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Leu Leu His Val Thr Ser Ile Arg Ser Ala Trp Ile Leu
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Ser Gly Leu Arg Val Ser His Arg Lys Ala Leu Thr Thr
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Phe Leu Pro Tyr His Thr Leu Arg Thr Val His Leu Thr
1 5 10

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Thr Val His Leu Thr Thr Trp Lys Val Gly Leu Cys Lys
1 5 10

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Met Glu Pro Asn Gly Thr Phe Ser Asn Asn Asn Ser
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Gly Thr Phe Ser Asn Asn Asn Ser Arg Asn Cys Thr Ile Glu
1 5 10

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Asn Asn Asn Ser Arg Asn Cys Thr Ile Glu Asn Phe Lys Arg
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<210> 26
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<212> PRT
<213> homo sapiens

<400> 26

Ser Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys Leu Glu
1 5 10

<210> 27
<211> 733
<212> DNA
<213> homo sapiens

<400> 27
gggatccgga gcccaaatct tctgacaaaa ctcacacatg cccaccgtgc ccagcacctg 60

aattcgaggg tgcaccgtca gtcttcctct tccccccaaa acccaaggac accctcatga 120

tctcccggac tcctgaggtc acatgcgtgg tggtggacgt aagccacgaa gaccctgagg 180

tcaagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca aagccgcggg 240

aggagcagta caacagcacg taccgtgtgg tcagcgtcct caccgtcctg caccaggact 300

ggctgaatgg caaggagtac aagtgcaagg tctccaacaa agccctccca acccccatcg 360

agaaaaccat ctccaaagcc aaagggcagc cccgagaacc acaggtgtac accctgcccc 420

catcccggga tgagctgacc aagaaccagg tcagcctgac ctgcctggtc aaaggcttct 480

atccaagcga catcgccgtg gagtgggaga gcaatgggca gccggagaac aactacaaga 540

ccacgcctcc cgtgctggac tccgacggct ccttcttcct ctacagcaag ctcaccgtgg 600

acaagagcag gtggcagcag gggaacgtct tctcatgctc cgtgatgcat gaggctctgc 660

acaaccacta cacgcagaag agcctctccc tgtctccggg taaatgagtg cgacggccgc 720

gactctagag gat 733

<210> 28

<211> 8
<212> PRT
<213> bacteriophage T7

<400> 28

Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 29
<211> 1041
<212> DNA
<213> Homo sapiens

<220>
<221> CDS
<222> (1)..(1038)

<400> 29

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atg gag aga aaa ttt atg tcc ttg caa cca tcc atc tcc gta tca gaa       48
Met Glu Arg Lys Phe Met Ser Leu Gln Pro Ser Ile Ser Val Ser Glu
1               5                   10                  15

atg gaa cca aat ggc acc ttc agc aat aac aac agc agg aac tgc aca       96
Met Glu Pro Asn Gly Thr Phe Ser Asn Asn Asn Ser Arg Asn Cys Thr
            20                  25                  30

att gaa aac ttc aag aga gaa ttt ttc cca att gta tat ctg ata ata      144
Ile Glu Asn Phe Lys Arg Glu Phe Phe Pro Ile Val Tyr Leu Ile Ile
        35                  40                  45

ttt ttc tgg gga gtc ttg gga aat ggg ttg tcc ata tat gtt ttc ctg      192
Phe Phe Trp Gly Val Leu Gly Asn Gly Leu Ser Ile Tyr Val Phe Leu
    50                  55                  60

cag cct tat aag aag tcc aca tct gtg aac gtt ttc atg cta aat ctg      240
Gln Pro Tyr Lys Lys Ser Thr Ser Val Asn Val Phe Met Leu Asn Leu
65                  70                  75                  80

gcc att tca gat ctc ctg ttc ata agc acg ctt ccc ttc agg gct gac      288
Ala Ile Ser Asp Leu Leu Phe Ile Ser Thr Leu Pro Phe Arg Ala Asp
                85                  90                  95

tat tat ctt aga ggc tcc aat tgg ata ttt gga gac ctg gcc tgc agg      336
Tyr Tyr Leu Arg Gly Ser Asn Trp Ile Phe Gly Asp Leu Ala Cys Arg
            100                 105                 110

att atg tct tat tcc ttg tat gtc aac atg tac agc agt att tat ttc      384
Ile Met Ser Tyr Ser Leu Tyr Val Asn Met Tyr Ser Ser Ile Tyr Phe
        115                 120                 125

ctg acc gtg ctg agt gtt gtg cgt ttc ctg gca atg gtt cac ccc ttt      432
Leu Thr Val Leu Ser Val Val Arg Phe Leu Ala Met Val His Pro Phe
    130                 135                 140

cgg ctt ctg cat gtc acc agc atc agg agt gcc tgg atc ctc tgt ggg      480
Arg Leu Leu His Val Thr Ser Ile Arg Ser Ala Trp Ile Leu Cys Gly
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145                 150                 155                 160

atc ata tgg atc ctt atc atg gct tcc tca ata atg ctc ctg gac agt      528
Ile Ile Trp Ile Leu Ile Met Ala Ser Ser Ile Met Leu Leu Asp Ser
                165                 170                 175

ggc tct gag cag aac ggc agt gtc aca tca tgc tta gag ctg aat ctc      576
Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys Leu Glu Leu Asn Leu
            180                 185                 190

tat aaa att gct aag ctg cag acc atg aac tat att gcc ttg gtg gtg      624
Tyr Lys Ile Ala Lys Leu Gln Thr Met Asn Tyr Ile Ala Leu Val Val
        195                 200                 205

ggc tgc ctg ctg cca ttt ttc aca ctc agc atc tgt tat ctg ctg atc      672
Gly Cys Leu Leu Pro Phe Phe Thr Leu Ser Ile Cys Tyr Leu Leu Ile
    210                 215                 220

att cgg gtt ctg tta aaa gtg gag gtc cca gaa tcg ggg ctg cgg gtt      720
Ile Arg Val Leu Leu Lys Val Glu Val Pro Glu Ser Gly Leu Arg Val
225                 230                 235                 240

tct cac agg aag gca ctg acc acc atc atc atc acc ttg atc atc ttc      768
Ser His Arg Lys Ala Leu Thr Thr Ile Ile Ile Thr Leu Ile Ile Phe
                245                 250                 255

ttc ttg tgt ttc ctg ccc tat cac aca ctg agg acc gtc cac ttg acg      816
Phe Leu Cys Phe Leu Pro Tyr His Thr Leu Arg Thr Val His Leu Thr
            260                 265                 270

aca tgg aaa gtg ggt tta tgc aaa gac aga ctg cat aaa gct ttg gtt      864
Thr Trp Lys Val Gly Leu Cys Lys Asp Arg Leu His Lys Ala Leu Val
        275                 280                 285

atc aca ctg gcc ttg gca gca gcc aat gcc tgc ttc aat cct ctg ctc      912
Ile Thr Leu Ala Leu Ala Ala Ala Asn Ala Cys Phe Asn Pro Leu Leu
    290                 295                 300

tat tac ttt gct ggg gag aat ttt aag gac aga cta aag tct gca ctc      960
Tyr Tyr Phe Ala Gly Glu Asn Phe Lys Asp Arg Leu Lys Ser Ala Leu
305                 310                 315                 320

aga aaa ggc cat cca cag aag gca aag aca aag tgt gtt ttc cct gtt     1008
Arg Lys Gly His Pro Gln Lys Ala Lys Thr Lys Cys Val Phe Pro Val
                325                 330                 335

agt gtg tgg ttg aga aag gaa aca aga gta taa                        1041
Ser Val Trp Leu Arg Lys Glu Thr Arg Val
            340                 345
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<210> 30
<211> 346
<212> PRT
<213> Homo sapiens

<400> 30

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Met Glu Arg Lys Phe Met Ser Leu Gln Pro Ser Ile Ser Val Ser Glu
1               5                  10                  15

Met Glu Pro Asn Gly Thr Phe Ser Asn Asn Asn Ser Arg Asn Cys Thr
            20                  25                  30

Ile Glu Asn Phe Lys Arg Glu Phe Phe Pro Ile Val Tyr Leu Ile Ile
        35                  40                  45

Phe Phe Trp Gly Val Leu Gly Asn Gly Leu Ser Ile Tyr Val Phe Leu
    50                  55                  60

Gln Pro Tyr Lys Lys Ser Thr Ser Val Asn Val Phe Met Leu Asn Leu
65                  70                  75                  80

Ala Ile Ser Asp Leu Leu Phe Ile Ser Thr Leu Pro Phe Arg Ala Asp
                85                  90                  95

Tyr Tyr Leu Arg Gly Ser Asn Trp Ile Phe Gly Asp Leu Ala Cys Arg
            100                 105                 110

Ile Met Ser Tyr Ser Leu Tyr Val Asn Met Tyr Ser Ser Ile Tyr Phe
        115                 120                 125

Leu Thr Val Leu Ser Val Val Arg Phe Leu Ala Met Val His Pro Phe
    130                 135                 140

Arg Leu Leu His Val Thr Ser Ile Arg Ser Ala Trp Ile Leu Cys Gly
145                 150                 155                 160

Ile Ile Trp Ile Leu Ile Met Ala Ser Ser Ile Met Leu Leu Asp Ser
                165                 170                 175

Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys Leu Glu Leu Asn Leu
            180                 185                 190

Tyr Lys Ile Ala Lys Leu Gln Thr Met Asn Tyr Ile Ala Leu Val Val
        195                 200                 205

Gly Cys Leu Leu Pro Phe Phe Thr Leu Ser Ile Cys Tyr Leu Leu Ile
    210                 215                 220
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```
Ile Arg Val Leu Leu Lys Val Glu Val Pro Glu Ser Gly Leu Arg Val
225                 230                 235                 240

Ser His Arg Lys Ala Leu Thr Thr Ile Ile Ile Thr Leu Ile Ile Phe
                245                 250                 255

Phe Leu Cys Phe Leu Pro Tyr His Thr Leu Arg Thr Val His Leu Thr
            260                 265                 270

Thr Trp Lys Val Gly Leu Cys Lys Asp Arg Leu His Lys Ala Leu Val
        275                 280                 285

Ile Thr Leu Ala Leu Ala Ala Ala Asn Ala Cys Phe Asn Pro Leu Leu
    290                 295                 300

Tyr Tyr Phe Ala Gly Glu Asn Phe Lys Asp Arg Leu Lys Ser Ala Leu
305                 310                 315                 320

Arg Lys Gly His Pro Gln Lys Ala Lys Thr Lys Cys Val Phe Pro Val
                325                 330                 335

Ser Val Trp Leu Arg Lys Glu Thr Arg Val
            340                 345

<210>  31
<211>  25
<212>  PRT
<213>  Homo sapiens

<400>  31

Phe Phe Pro Ile Val Tyr Leu Ile Ile Phe Phe Trp Gly Val Leu Gly
1               5                   10                  15

Asn Gly Leu Ser Ile Tyr Val Phe Leu
            20                  25

<210>  32
<211>  25
<212>  PRT
<213>  Homo sapiens

<400>  32

Val Phe Met Leu Asn Leu Ala Ile Ser Asp Leu Leu Phe Ile Ser Thr
1               5                   10                  15

Leu Pro Phe Arg Ala Asp Tyr Tyr Leu
            20                  25
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<210> 33
<211> 22
<212> PRT
<213> Homo sapiens

<400> 33

Val Asn Met Tyr Ser Ser Ile Tyr Phe Leu Thr Val Leu Ser Val Val
1 5 10 15

Arg Phe Leu Ala Met Val
20

<210> 34
<211> 20
<212> PRT
<213> Homo sapiens

<400> 34

Ala Trp Ile Leu Cys Gly Ile Ile Trp Ile Leu Ile Met Ala Ser Ser
1 5 10 15

Ile Met Leu Leu
20

<210> 35
<211> 28
<212> PRT
<213> Homo sapiens

<400> 35

Ile Ala Lys Leu Gln Thr Met Asn Tyr Ile Ala Leu Val Val Gly Cys
1 5 10 15

Leu Leu Pro Phe Phe Thr Leu Ser Ile Cys Tyr Leu
20 25

<210> 36
<211> 22
<212> PRT
<213> Homo sapiens

<400> 36

Ala Leu Thr Thr Ile Ile Ile Thr Leu Ile Ile Phe Phe Leu Cys Phe
1 5 10 15

Leu Pro Tyr His Thr Leu
20

<210> 37
<211> 23
<212> PRT
<213> Homo sapiens

<400> 37

Ala Leu Val Ile Thr Leu Ala Leu Ala Ala Ala Asn Ala Cys Phe Asn
1 5 10 15

Pro Leu Leu Tyr Tyr Phe Ala
20

<210> 38
<211> 13
<212> PRT
<213> Homo sapiens

<400> 38

Leu Leu His Val Thr Ser Ile Arg Ser Ala Trp Ile Leu
1 5 10

<210> 39
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<212> PRT
<213> Homo sapiens

<400> 39

Ser Gly Leu Arg Val Ser His Arg Lys Ala Leu Thr Thr
1 5 10

<210> 40
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<212> PRT
<213> Homo sapiens

<400> 40

Phe Leu Pro Tyr His Thr Leu Arg Thr Val His Leu Thr
1 5 10

<210> 41
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<212> PRT
<213> Homo sapiens

<400> 41

Thr Val His Leu Thr Thr Trp Lys Val Gly Leu Cys Lys
1 5 10

<210> 42
<211> 14
<212> PRT
<213> Homo sapiens

<400> 42

Ser Glu Met Glu Pro Asn Gly Thr Phe Ser Asn Asn Asn Ser

1 5 10

<210> 43
<211> 14
<212> PRT
<213> Homo sapiens

<400> 43

Gly Thr Phe Ser Asn Asn Asn Ser Arg Asn Cys Thr Ile Glu
1 5 10

<210> 44
<211> 14
<212> PRT
<213> Homo sapiens

<400> 44

Asn Asn Asn Ser Arg Asn Cys Thr Ile Glu Asn Phe Lys Arg
1 5 10

<210> 45
<211> 14
<212> PRT
<213> Homo sapiens

<400> 45

Ser Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys Leu Glu
1 5 10

<210> 46
<211> 38
<212> DNA
<213> Homo sapiens

<400> 46
gcagcagcgg ccgcgaattt ttcccaattg tatatctg 38

<210> 47
<211> 37
<212> DNA
<213> Homo sapiens

<400> 47
gcagcagtcg acttatactc ttgtttcctt tctcaac 37

<210> 48
<211> 38
<212> DNA
<213> Homo sapiens

<400> 48
gcagcagcgg ccgcatggaa ccaaatggca ccttcagc 38

<210> 49
<211> 36
<212> DNA
<213> Homo sapiens

<400> 49
gcagcagtcg accccagcaa agtaatagag cagagg 36

<210> 50
<211> 38
<212> DNA
<213> Homo sapiens

<400> 50
gcagcagcgg ccgcgaattt ttcccaattg tatatctg 38

<210> 51
<211> 37
<212> DNA
<213> Homo sapiens

<400> 51
gcagcagtcg actactcttg tttccttttct caaccac 37

<210> 52
<211> 39
<212> DNA
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<400> 52
gcagcagcgg ccgcatggag agaaaattta tgtccttgc 39

<210> 53
<211> 36
<212> DNA
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<400> 53
gcagcagtcg accccagcaa agtaatagag cagagg 36

<210> 54
<211> 1026
<212> DNA
<213> Homo sapiens

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<222> (1)..(1023)

<400> 54

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atg tcc ttg caa cca tcc atc tcc gta tca gaa atg gaa cca aat ggc       48
Met Ser Leu Gln Pro Ser Ile Ser Val Ser Glu Met Glu Pro Asn Gly
1               5                   10                  15

acc ttc agc aat aac aac agc agg aac tgc aca att gaa aac ttc aag       96
Thr Phe Ser Asn Asn Asn Ser Arg Asn Cys Thr Ile Glu Asn Phe Lys
            20                  25                  30

aga gaa ttt ttc cca att gta tat ctg ata ata ttt ttc tgg gga gtc      144
Arg Glu Phe Phe Pro Ile Val Tyr Leu Ile Ile Phe Phe Trp Gly Val
        35                  40                  45

ttg gga aat ggg ttg tcc ata tat gtt ttc ctg cag cct tat aag aag      192
Leu Gly Asn Gly Leu Ser Ile Tyr Val Phe Leu Gln Pro Tyr Lys Lys
    50                  55                  60

tcc aca tct gtg aac gtt ttc atg cta aat ctg gcc att tca gat ctc      240
Ser Thr Ser Val Asn Val Phe Met Leu Asn Leu Ala Ile Ser Asp Leu
65                  70                  75                  80

ctg ttc ata agc acg ctt ccc ttc agg gct gac tat tat ctt aga ggc      288
Leu Phe Ile Ser Thr Leu Pro Phe Arg Ala Asp Tyr Tyr Leu Arg Gly
                85                  90                  95

tcc aat tgg ata ttt gga gac ctg gcc tgc agg att atg tct tat tcc      336
Ser Asn Trp Ile Phe Gly Asp Leu Ala Cys Arg Ile Met Ser Tyr Ser
            100                 105                 110

ttg tat gtc aac atg tac agc agt att tat ttc ctg acc gtg ctg agt      384
Leu Tyr Val Asn Met Tyr Ser Ser Ile Tyr Phe Leu Thr Val Leu Ser
        115                 120                 125

gtt gtg cgt ttc ctg gca atg gtt cac ccc ttt cgg ctt ctg cat gtc      432
Val Val Arg Phe Leu Ala Met Val His Pro Phe Arg Leu Leu His Val
    130                 135                 140

acc agc atc agg agt gcc tgg atc ctc tgt ggg atc ata tgg atc ctt      480
Thr Ser Ile Arg Ser Ala Trp Ile Leu Cys Gly Ile Ile Trp Ile Leu
145                 150                 155                 160

atc atg gct tcc tca ata atg ctc ctg gac agt ggc tct gag cag aac      528
Ile Met Ala Ser Ser Ile Met Leu Leu Asp Ser Gly Ser Glu Gln Asn
                165                 170                 175

ggc agt gtc aca tca tgc tta gag ctg aat ctc tat aaa att gct aag      576
Gly Ser Val Thr Ser Cys Leu Glu Leu Asn Leu Tyr Lys Ile Ala Lys
            180                 185                 190

ctg cag acc atg aac tat att gcc ttg gtg gtg ggc tgc ctg ctg cca      624
Leu Gln Thr Met Asn Tyr Ile Ala Leu Val Val Gly Cys Leu Leu Pro
        195                 200                 205

ttt ttc aca ctc agc atc tgt tat ctg ctg atc att cgg gtt ctg tta      672
Phe Phe Thr Leu Ser Ile Cys Tyr Leu Leu Ile Ile Arg Val Leu Leu
    210                 215                 220

aaa gtg gag gtc cca gaa tcg ggg ctg cgg gtt tct cac agg aag gca      720
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```
Lys Val Glu Val Pro Glu Ser Gly Leu Arg Val Ser His Arg Lys Ala
225                 230                 235                 240

ctg acc acc atc atc atc acc ttg atc atc ttc ttc ttg tgt ttc ctg      768
Leu Thr Thr Ile Ile Ile Thr Leu Ile Ile Phe Phe Leu Cys Phe Leu
                245                 250                 255

ccc tat cac aca ctg agg acc gtc cac ttg acg aca tgg aaa gtg ggt      816
Pro Tyr His Thr Leu Arg Thr Val His Leu Thr Thr Trp Lys Val Gly
            260                 265                 270

tta tgc aaa gac aga ctg cat aaa gct ttg gtt atc aca ctg gcc ttg      864
Leu Cys Lys Asp Arg Leu His Lys Ala Leu Val Ile Thr Leu Ala Leu
        275                 280                 285

gca gca gcc aat gcc tgc ttc aat cct ctg ctc tat tac ttt gct ggg      912
Ala Ala Ala Asn Ala Cys Phe Asn Pro Leu Leu Tyr Tyr Phe Ala Gly
    290                 295                 300

gag aat ttt aag gac aga cta aag tct gca ctc aga aaa ggc cat cca      960
Glu Asn Phe Lys Asp Arg Leu Lys Ser Ala Leu Arg Lys Gly His Pro
305                 310                 315                 320

cag aag gca aag aca aag tgt gtt ttc cct gtt agt gtg tgg ttg aga     1008
Gln Lys Ala Lys Thr Lys Cys Val Phe Pro Val Ser Val Trp Leu Arg
                325                 330                 335

aag gaa aca aga gta taa                                            1026
Lys Glu Thr Arg Val
            340
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<210> 55
<211> 341
<212> PRT
<213> Homo sapiens

<400> 55

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Met Ser Leu Gln Pro Ser Ile Ser Val Ser Glu Met Glu Pro Asn Gly
1               5                   10                  15

Thr Phe Ser Asn Asn Asn Ser Arg Asn Cys Thr Ile Glu Asn Phe Lys
            20                  25                  30

Arg Glu Phe Phe Pro Ile Val Tyr Leu Ile Ile Phe Phe Trp Gly Val
        35                  40                  45

Leu Gly Asn Gly Leu Ser Ile Tyr Val Phe Leu Gln Pro Tyr Lys Lys
    50                  55                  60

Ser Thr Ser Val Asn Val Phe Met Leu Asn Leu Ala Ile Ser Asp Leu
65                  70                  75                  80
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Leu Phe Ile Ser Thr Leu Pro Phe Arg Ala Asp Tyr Tyr Leu Arg Gly
                85                  90                  95

Ser Asn Trp Ile Phe Gly Asp Leu Ala Cys Arg Ile Met Ser Tyr Ser
            100                 105                 110

Leu Tyr Val Asn Met Tyr Ser Ser Ile Tyr Phe Leu Thr Val Leu Ser
        115                 120                 125

Val Val Arg Phe Leu Ala Met Val His Pro Phe Arg Leu Leu His Val
    130                 135                 140

Thr Ser Ile Arg Ser Ala Trp Ile Leu Cys Gly Ile Ile Trp Ile Leu
145                 150                 155                 160

Ile Met Ala Ser Ser Ile Met Leu Leu Asp Ser Gly Ser Glu Gln Asn
                165                 170                 175

Gly Ser Val Thr Ser Cys Leu Glu Leu Asn Leu Tyr Lys Ile Ala Lys
            180                 185                 190

Leu Gln Thr Met Asn Tyr Ile Ala Leu Val Val Gly Cys Leu Leu Pro
        195                 200                 205

Phe Phe Thr Leu Ser Ile Cys Tyr Leu Leu Ile Ile Arg Val Leu Leu
    210                 215                 220

Lys Val Glu Val Pro Glu Ser Gly Leu Arg Val Ser His Arg Lys Ala
225                 230                 235                 240

Leu Thr Thr Ile Ile Ile Thr Leu Ile Ile Phe Phe Leu Cys Phe Leu
                245                 250                 255

Pro Tyr His Thr Leu Arg Thr Val His Leu Thr Thr Trp Lys Val Gly
            260                 265                 270

Leu Cys Lys Asp Arg Leu His Lys Ala Leu Val Ile Thr Leu Ala Leu
        275                 280                 285

Ala Ala Ala Asn Ala Cys Phe Asn Pro Leu Leu Tyr Tyr Phe Ala Gly
    290                 295                 300
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Glu Asn Phe Lys Asp Arg Leu Lys Ser Ala Leu Arg Lys Gly His Pro
305 310 315 320

Gln Lys Ala Lys Thr Lys Cys Val Phe Pro Val Ser Val Trp Leu Arg
325 330 335

Lys Glu Thr Arg Val
340

<210> 56
<211> 14
<212> PRT
<213> Homo sapiens

<400> 56

Phe Leu Gln Pro Tyr Lys Lys Ser Thr Ser Val Asn Val Phe
5 10

<210> 57
<211> 11
<212> PRT
<213> Homo sapiens

<400> 57

Val Ser Val Trp Leu Arg Lys Glu Thr Arg Val
5 10

<210> 58
<211> 14
<212> PRT
<213> Homo sapiens

<400> 58

Ile Met Leu Leu Asp Ser Gly Ser Glu Gln Asn Gly Ser Val
5 10

<210> 59
<211> 14
<212> PRT
<213> Homo sapiens

<400> 59

Asn Gly Ser Val Thr Ser Cys Leu Glu Leu Asn Leu Tyr Lys
5 10

<210> 60
<211> 15
<212> PRT
<213> Homo sapiens

<400> 60

Met Glu Pro Asn Gly Thr Phe Ser Asn Asn Asn Ser Arg Asn Cys
1 5 10 15

<210> 61
<211> 16
<212> PRT
<213> Homo sapiens

<400> 61

Ile Ile Phe Phe Trp Gly Val Leu Gly Asn Gly Leu Ser Ile Tyr Val
1 5 10 15

<210> 62
<211> 16
<212> PRT
<213> Homo sapiens

<400> 62

Phe Trp Gly Val Leu Gly Asn Gly Leu Ser Ile Tyr Val Phe Leu Gln
1 5 10 15

<210> 63
<211> 16
<212> PRT
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<400> 63

Met Leu Leu Asp Ser Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys
1 5 10 15

<210> 64
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<212> PRT
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Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys Leu Glu Leu Asn Leu
1 5 10 15

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Glu Val Pro Glu Ser Gly Leu Arg Val Ser His Arg Lys Ala Leu Thr
1 5 10 15

<210> 66

<211> 14
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<400> 66

Phe Leu Gln Pro Tyr Lys Lys Ser Thr Ser Val Asn Val Phe
1 5 10

<210> 67
<211> 11
<212> PRT
<213> Homo sapiens

<400> 67

Val Ser Val Trp Leu Arg Lys Glu Thr Arg Val
1 5 10

<210> 68
<211> 14
<212> PRT
<213> Homo sapiens

<400> 68

Leu Gln Pro Ser Ile Ser Val Ser Glu Met Glu Pro Asn Gly
1 5 10

<210> 69
<211> 14
<212> PRT
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<400> 69

Pro Ser Ile Ser Val Ser Glu Met Glu Pro Asn Gly Thr Phe
1 5 10

<210> 70
<211> 14
<212> PRT
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<400> 70

Ile Met Leu Leu Asp Ser Gly Ser Glu Gln Asn Gly Ser Val
1 5 10

<210> 71
<211> 14
<212> PRT
<213> Homo sapiens

<400> 71

Asn Gly Ser Val Thr Ser Cys Leu Glu Leu Asn Leu Tyr Lys

1 5 10

<210> 72
<211> 15
<212> PRT
<213> Homo sapiens

<400> 72

Met Glu Pro Asn Gly Thr Phe Ser Asn Asn Asn Ser Arg Asn Cys
1 5 10 15

<210> 73
<211> 16
<212> PRT
<213> Homo sapiens

<400> 73

Ile Ile Phe Phe Trp Gly Val Leu Gly Asn Gly Leu Ser Ile Tyr Val
1 5 10 15

<210> 74
<211> 16
<212> PRT
<213> Homo sapiens

<400> 74

Phe Trp Gly Val Leu Gly Asn Gly Leu Ser Ile Tyr Val Phe Leu Gln
1 5 10 15

<210> 75
<211> 16
<212> PRT
<213> Homo sapiens

<400> 75

Met Leu Leu Asp Ser Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys
1 5 10 15

<210> 76
<211> 16
<212> PRT
<213> Homo sapiens

<400> 76

Gly Ser Glu Gln Asn Gly Ser Val Thr Ser Cys Leu Glu Leu Asn Leu
1 5 10 15

<210> 77
<211> 16
<212> PRT
<213> Homo sapiens

<400> 77

Glu Val Pro Glu Ser Gly Leu Arg Val Ser His Arg Lys Ala Leu Thr
1 5 10 15

<210> 78
<211> 36
<212> DNA
<213> Homo sapiens

<400> 78
ccgctagcgc atggaaaatg gcaccttcag caataa 36

<210> 79
<211> 37
<212> DNA
<213> Homo sapiens

<400> 79
cggcggccgc ttatactctt gtttcctttc tcaacca 37

<210> 80
<211> 99
<212> DNA
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<222> (25)..(83)
<223> wherein "n" equals A, G, C, or T

<220>
<221> misc_feature
<222> (27)..(84)
<223> wherein "b" equals G, C, or T

<400> 80
cgaagcgtaa gggcccagcc ggccnnbnnb nnbnnbnnbn nbnnbnnbnn bnnbnnbnnb 60

nnbnnbnnbn nbnnbnnbnn bnnbccgggt ccgggcggc 99

<210> 81
<211> 95
<212> DNA
<213> artificial

<220>
<223> Peptide library random oligo.

<220>
<221> misc_feature
<222> (22)..(80)
<223> wherein "n" equals A, G, C, or T

<220>
<221> misc_feature
<222> (21)..(78)
<223> wherein "n" equals C, A, or G.

<400> 81
aaaaggaaaa aagcggccgc vnnvnnvnnv nnvnnvnnvn nvnnvnnvnn vnnvnnvnnv 60

nnvnnvnnvn nvnnvnnvnn gccgcccgga cccgg 95